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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,534	03/29/2004	Zeev Schmilovitch		2288

7590 10/18/2006

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3 BEGIN STREET
56478
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EXAMINER	
STOCK JR, GORDON J	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/811,534	SCHMILOVITCH ET AL.	
	Examiner	Art Unit	
	Gordon J. Stock	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) *27-39* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20040423*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of **claims 1-26** in the reply filed on July 31, 2006 is acknowledged.

2. **Claims 27-39** are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 31, 2006.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on April 23, 2004 has been considered by the examiner.

Drawings and Specification

4. The drawings and the specification are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 34 of Fig. 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1, 2, 4, 5, 7, 10-18, 25-26** are rejected under 35 U.S.C. 102(b) as being anticipated by **Borsboom et al. (WO 00/64242).**

As for **claims 1, 12, and 18**, Borsboom in a device for analyzing products discloses the following: a system comprising the following: a sampling chamber (**claims 1 and 12**)(Fig. 9: 23 or Fig. 10: 23) comprising: a flow conduit (**claims 1 and 12**)(Figs. 9 or 10: T-shaped flow conduit); a recessed cavity in fluid contact with said conduit and disposed in a generally downward direction such that a sample of the fluid in said conduit can enter and exit said cavity so as to repeatedly replace the sample contained therein (**claims 1 and 12**)(Figs. 9 or 10: 23 cavity between 16 and 17 or 23 between 19, 20, and 17); a plurality of optical beam sources emitting an optical beam in an essentially continuum of wavelengths at least two of said sources having different spectral ranges of emission, said sources being disposed such that the optical beam from said sources is incident to the fluid sample contained in said cavity (**claim 12**) (page 23, lines 10-20 and 29-35, page 28, lines 1-10; Fig. 3: 7; Fig. 9: 16 or Fig. 10: 19 and 20); at least one detector measuring transmission (**claim 12**)(Fig. 9: 17 or Fig. 10: 17); thereby, providing a optical transmission path (**claim 1**)(Fig. 9: between 16 and 17 of Fig. 10: 19, 20, and 17); a

control system which serially causes excitation of at least two of said optical beam sources, such that the fluid is separately scanned with wavelengths of said optical beams emanating from said at least two optical beam sources (**claim 12**)(page 23, lines 29-35); a computing system to determine the concentration of the least one component of the fluid from the intensity of at least from transmission (**claim 12**)(Fig. 12: 33; page 25, lines 34-37; page 26, lines 1-20); wherein, a detector may measure reflection (**claim 18**) (Fig. 7: 17; Fig. 10: 17).

As for **claim 2**, Borsboom discloses everything as above (see **claim 1**). In addition, he discloses an entry port and at least one exit port (Fig. 9: ports supporting 16 and 17 or Fig. 10: ports supporting 17, 19, and 20).

As for **claim 4**, Borsboom discloses everything as above (see **claim 2**). In addition, he discloses said entry port and said exit port are disposed such that the optical beam traverses said cavity linearly, such that said exit detector measures optical transmission through the fluid sample contained in said cavity (Fig. 9: 17).

As for **claim 5**, Borsboom discloses everything as above (see **claim 2**). In addition, he discloses the exit port is disposed at a predetermined angle to the direction of the entering optical beam, such that said exit detector measures optical scattering through the fluid sample contained in said cavity (Fig. 10: 17 angled from 19 and 20).

As for **claim 7**, Borsboom discloses everything as above (see **claim 1**). In addition, he discloses that the recessed cavity is formed and disposed such that the fluid sample is repeatedly changed by the effects of the flow of the fluid in said conduit (Fig. 9 and 10: 23 in view of Figs. 12 and 13).

As for **claims 10, 25, 26**, Borsboom discloses everything as above (see **claims 1 and 12**). In addition, he discloses the conduit is a milk conduit and system determines constitution of milk on-line during the milking process (Fig. 12: 33; Fig. 13: 90 and page 26: lines 30-35).

As for **claim 11**, Borsboom discloses everything as above (see **claim 1**). In addition, the he discloses that the optical measurements are utilized to determine a relative concentration of at least one of the components of the fluid (page 26, lines 10-20).

As for **claim 13**, Borsboom discloses everything as above (see **claim 12**). In addition, he discloses the sources are LEDs (page 23, lines 3-6).

As for **claims 14-15,** Borsboom discloses everything as above (see **claim 12**). In addition, he discloses that the spectral half width is less than 40nm (page 28, lines 5-8).

As for **claims 16-17**, Borsboom discloses everything as above (see **claim 12**). In addition, he discloses that the optical beam sources are at least 10 sources (Fig. 3: 7).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Borsboom et al. (WO 00/64242).**

As for **claim 3**, Borsboom discloses everything as above (see **claim 1**). As for the embodiments of Figs. 9 and 10, he is silent concerning optical fibers. However, he teaches optical fibers for light transmission (Fig. 14b: 62 and 63). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention to provide optical fibers in order to provide a direct optical coupling for illumination of the fluid sample to be investigated.

10. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Borsboom et al. (WO 00/64242)** in view of **Lovette et al. (6,407,813).**

As for **claim 6**, Borsboom is silent concerning co positioning the exit port with said entry port such that said sampling chamber measures optical back scattering from the fluid. He does show back scattering measurements (Fig 7: 17 and Fig. 10: 17). However, Lovette in a measurement system for determining concentrations in a fluid teaches having a co positional exit/entrance port for back scattering measurements (Fig. 7: 110, 120, 162). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the entry/entrance ports be co positional for backscattering measurements in order to have a more compact system by having a single port for both detector and light source.

11. **Claims 8-9, 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Borsboom et al. (WO 00/64242)** in view of **Klein (WO 96/31764).**

As for **claims 8-9**, Borsboom discloses everything as above (see **claim 1**). He is silent concerning the cavity being formed that the optical measurements are generally unaffected by flow turbulence and flow pulsation in said conduit. However, Klein in a fluid evaluation system teaches strobing light sources to make optical measurements unaffected by flow turbulence and pulsation (page 18, lines 22-32). And Borsboom discloses specific LED control (page 23, lines 29-37). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the cavity formed so that optical measurements are unaffected by flow turbulence/flow pulsation accompanied by strobing lighting effects by the light source in the cavity to correct for any alteration in optical characteristics in time.

As for **claim 19**, Borsboom discloses everything as above (see **claim 12**). He does not explicitly state that the computing system performs both scattering and transmission intensities correlation with concentration of a component into an expression. However, Klein in a fluid evaluation system does teach scattering and transmission intensities for concentration evaluation using a mathematical expression (Figs. 1, 1b, Fig. 4: 22; page 29, lines 15-25). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the processing system determine concentration by relating the intensity of said optical beam transmitted and scattered by a mathematical expression in order to determine multiple constituents in the milk sample.

12. **Claims 20-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Borsboom et al. (WO 00/64242)** in view of **Klein (WO 96/31764)** further in view of **Lovette et al. (6,407,813).**

As for **claim 20**, Borsboom in view of Klein discloses everything as above (see **claim 19**). Borsboom is silent concerning a polynomial expression of at least second order for the intensities. However, Lovette in a fluid measurement system teaches at least a second order polynomial expression (col. 9, lines 45-60). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the expression be at least a second order polynomial in order to determine fat and casein concentrations in the milk sample.

As for **claim 21**, Borsboom in view of Klein discloses everything as above (see **claim 19**). And in view of Klein a statistical analysis with samples with known concentrations are used (page 29, lines 15-25). However, they do not explicitly state using empirical coefficients. However, Lovette in a fluid measurement system teaches at least a second order polynomial expression comprising empirical coefficients (col. 9, lines 45-60). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use empirical coefficients in order to determine fat and casein concentrations in the milk sample.

As for **claims 22-23**, Borsboom in view of Klein and Lovette discloses everything as above (see **claim 20**). They do not explicitly mention a partial least squares or ridge least squares regression method. However, in view of Lovette a second order polynomial expression is used (col. 9, lines 45-60). And in view of Klein an appropriate correlation method is used (page 29, lines 23-25). Examiner takes Official Notice that partial least squares and ridge least squares regression methods are well known statistical methods. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use a partial least squares or ridge least squares method in order to correlate intensities with a second order polynomial expression to determine casein and fat concentrations in a milk sample.

As for **claim 24**, Borsboom in view of Klein and Lovette discloses everything as above (see claim 21). In addition, in view of Klein the data is stored in a database (Fig. 4: 22, 23; page 29, lines 20-21). And statistical methods are used to determine concentrations (Klein: page 29, lines 24-26).

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: **(571) 273-8300**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431. The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gs
October 16, 2006

Layla Lauchman
Primary Examiner
Art Unit 2877